

XI.1 Novel, High Capacity Hydrogen Storage System (Phase I Project)

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The use of hydrogen as a transportation fuel would have many advantages, but current methods for storing hydrogen onboard a vehicle do not meet DOE goals and are unlikely to be commercially feasible. Known systems and materials have problems with hydrogen storage capacity, temperature of operation, and pressure of operation. A room temperature hydrogen storage system that relies on the electrochemical storage of hydrogen would be a big step forward for both the FreedomCAR and Fuel Initiative programs. This project will develop novel low temperature and pressure hydrogen storage materials to meet DOE goals. Phase I will involve proof-of-concept experiments to demonstrate the feasibility of the materials and the approach to improving reversibility at low temperatures. A laboratory-scale storage system will be developed to evaluate the materials.